

ABSTRACT OF THE DISCLOSURE

A beam collecting device and a laser emission device are disclosed incorporating a laminated optical waveguide array and refraction means therein. The laminated optical waveguide array is composed of a plurality of plate-like optical waveguides made of a material having a predetermined refractive index and a plurality of spacer members having a lower refractive index than that of said optical waveguides and arranged alternately with said optical waveguides. The spacer members take the form of cylindrical members, spherical members or plate-like members. The beam collecting device and laser emission device comprise a semiconductor laser array having a plurality of laser emitting parts arranged in fast and slow axis directions, the optical waveguide array, optical fibers and a collective lens. The laser emitting parts are divided into plural groups separated in the slow axis direction. Each of the optical waveguides collects plural laser beams from the laser emitting parts of a corresponding group aligned in the fast axis direction to an emission surface thereof and emits them to a corresponding one of the optical fibers. The refraction means is provided at the emission surface of each waveguide, at an incidence surface of each optical fiber or therebetween, so that the laser beam emitted from the emission surface of the waveguide at an acute angle is refracted to enter into the optical fiber at a gentle angle. Thus, laser beams entered into each optical fiber, without shining therethrough, are efficiently collected to the collective lens to be emitted to a target position.